

078-us1.ST25.txt
SEQUENCE LISTING

<110> Paz Einat, Louis Deiss, and Ruth Maya

<120> ISOCITRATE DEHYDROGENASE AND USES THEREOF

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<151> 2002-11-25

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<151> 2002-07-11

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<170> PatentIn version 3.2

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gtcaaa atg tcc aaa aaa atc agt ggc ggt tct gtg gta gag atg caa      288
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Gly Asp Glu Met Thr Arg Ile Ile Trp Glu Leu Ile Lys Glu Lys Leu
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Ile Phe Pro Tyr Val Glu Leu Asp Leu His Ser Tyr Asp Leu Gly Ile
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Ala Ile Ile Cys Lys Asn Ile Pro Arg Leu Val Ser Gly Trp Val Lys	
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Pro Ile Ile Ile Gly Arg His Ala Tyr Gly Asp Gln Tyr Arg Ala Thr	
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gat ttt gtt gtt cct ggg cct gga aaa gta gag ata acc tac aca cca	720
Asp Phe Val Val Pro Gly Pro Gly Lys Val Glu Ile Thr Tyr Thr Pro	
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agt gac gga acc caa aag gtg aca tac ctg gta cat aac ttt gaa gaa	768
Ser Asp Gly Thr Gln Lys Val Thr Tyr Leu Val His Asn Phe Glu Glu	
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Gly Gly Gly Val Ala Met Gly Met Tyr Asn Gln Asp Lys Ser Ile Glu	
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Asp Phe Ala His Ser Ser Phe Gln Met Ala Leu Ser Lys Gly Trp Pro	
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Leu Tyr Leu Ser Thr Lys Asn Thr Ile Leu Lys Lys Tyr Asp Gly Arg	
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Val Ala Gln Ala Met Lys Ser Glu Gly Gly Phe Ile Trp Ala Cys Lys	
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aac tat gat ggt gac gtg cag tcg gac tct gtg gcc caa ggg tat ggc	1104
Asn Tyr Asp Gly Asp Val Gln Ser Asp Ser Val Ala Gln Gly Tyr Gly	
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Ser Leu Gly Met Met Thr Ser Val Leu Val Cys Pro Asp Gly Lys Thr	
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Val Glu Ala Glu Ala Ala His Gly Thr Val Thr Arg His Tyr Arg Met	
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 370 375 380

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 385 390 395

 gat aaa ctt gga gaa aac ttg aag atc aaa cta gct cag gcc aaa ctt 1488
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 400 405 410

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Ile Cys Lys Asn Ile Pro Arg Leu Val Ser Gly Trp Val Lys Pro Ile
 115 120 125

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 130 135 140

Val Val Pro Gly Pro Gly Lys Val Glu Ile Thr Tyr Thr Pro Ser Asp
 145 150 155 160

Gly Thr Gln Lys Val Thr Tyr Leu Val His Asn Phe Glu Glu Gly Gly
 165 170 175

Gly Val Ala Met Gly Met Tyr Asn Gln Asp Lys Ser Ile Glu Asp Phe
 180 185 190

Ala His Ser Ser Phe Gln Met Ala Leu Ser Lys Gly Trp Pro Leu Tyr
 195 200 205

Leu Ser Thr Lys Asn Thr Ile Leu Lys Lys Tyr Asp Gly Arg Phe Lys
 210 215 220

Asp Ile Phe Gln Glu Ile Tyr Asp Lys Gln Tyr Lys Ser Gln Phe Glu
 225 230 235 240

Ala Gln Lys Ile Trp Tyr Glu His Arg Leu Ile Asp Asp Met Val Ala
 245 250 255

Gln Ala Met Lys Ser Glu Gly Gly Phe Ile Trp Ala Cys Lys Asn Tyr
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Asp Gly Asp Val Gln Ser Asp Ser Val Ala Gln Gly Tyr Gly Ser Leu
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Gly Met Met Thr Ser Val Leu Val Cys Pro Asp Gly Lys Thr Val Glu
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Ala Glu Ala Ala His Gly Thr Val Thr Arg His Tyr Arg Met Tyr Gln
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Ala Gly Phe Met Thr Lys Asp Leu Ala Ala Cys Ile Lys Gly Leu Pro
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Met Ala Gly Tyr Leu Arg Val Val Arg
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tcg ctc tgc aga gcc tca ggc tcg cgg ccg gcc tgg gcg ccg gcg gcc 161
Ser Leu Cys Arg Ala Ser Gly Ser Arg Pro Ala Trp Ala Pro Ala Ala
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ctg aca gcc ccc acc tcg caa gag cag ccg cgg cgc cac tat gcc gac 209
Leu Thr Ala Pro Thr Ser Gln Glu Gln Pro Arg Arg His Tyr Ala Asp
30 35 40
aaa agg atc aag gtg gcg aag ccc gtg gtg gag atg gat ggt gat gag 257
Lys Arg Ile Lys Val Ala Lys Pro Val Val Glu Met Asp Gly Asp Glu
45 50 55
atg acc cgt att atc tgg cag ttc atc aag gag aag ctc atc ctg ccc 305
Met Thr Arg Ile Ile Trp Gln Phe Ile Lys Glu Lys Leu Ile Leu Pro
60 65 70
cac gtg gac atc cag cta aag tat ttt gac ctc ggg ctc cca aac cgt 353
His Val Asp Ile Gln Leu Lys Tyr Phe Asp Leu Gly Leu Pro Asn Arg
75 80 85

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cgt Arg	gtg Val	gaa Glu	gag Glu 125	ttc Phe	aag Lys	ctg Leu	aag Lys	aag Lys 130	atg Met	tgg Trp	aaa Lys	agt Ser	ccc Pro 135	aat Asn	gga Gly	497
act Thr	atc Ile	cgg Arg 140	aac Asn	atc Ile	ctg Leu	ggg Gly 145	ggg Gly	act Thr	gtc Val	ttc Phe	cgg Arg	gag Glu 150	ccc Pro	atc Ile	atc Ile	545
tgc Cys	aaa Lys 155	aac Asn	atc Ile	cca Pro	cgc Arg	cta Leu 160	gtc Val	cct Pro	ggc Gly	tgg Trp	acc Thr 165	aag Lys	ccc Pro	atc Ile	acc Thr	593
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acc Thr 250	aag Lys	aac Asn	acc Thr	ata Ile	ctg Leu 255	aaa Lys	gcc Ala	tac Tyr	gat Asp 260	ggg Gly 260	cgt Arg	ttc Phe	aag Lys	gac Asp	atc Ile 265	881
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aag Lys	atc Ile	tgg Trp	tat Tyr 285	gag Glu	cac His	cgg Arg	ctc Leu	att Ile 290	gat Asp	gac Asp	atg Met	gtg Val	gct Ala 295	cag Gln	gtc Val	977
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gat Asp 315	gtg Val	cag Gln	tca Ser	gac Asp	atc Ile	ctg Leu 320	gcc Ala	cag Gln	ggc Gly	ttt Phe	ggc Gly 325	tcc Ser	ctt Leu	ggc Gly	ctg Leu	1073
atg Met 330	acg Thr	tcc Ser	gtc Val	ctg Leu	gtc Val 335	tgc Cys	cct Pro	gat Asp	ggg Gly 340	aag Lys	acg Thr	att Ile	gag Glu	gct Ala	gag Glu 345	1121

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cgg ccc acc agc acc aac ccc atc gcc agc atc ttt gcc tgg aca cgt 1217
Arg Pro Thr Ser Thr Asn Pro Ile Ala Ser Ile Phe Ala Trp Thr Arg
365 370 375

ggc ctg gag cac cgg ggg aag ctg gat ggg aac caa gac ctc atc agg 1265
Gly Leu Glu His Arg Gly Lys Leu Asp Gly Asn Gln Asp Leu Ile Arg
380 385 390

ttt gcc cag atg ctg gag aag gtg tgc gtg gag acg gtg gag agt gga 1313
Phe Ala Gln Met Leu Glu Lys Val Cys Val Glu Thr Val Glu Ser Gly
395 400 405

gcc atg acc aag gac ctg gcg ggc tgc att cac ggc ctc agc aat gtg 1361
Ala Met Thr Lys Asp Leu Ala Gly Cys Ile His Gly Leu Ser Asn Val
410 415 420 425

aag ctg aac gag cac ttc ctg aac acc acg gac ttc ctc gac acc atc 1409
Lys Leu Asn Glu His Phe Leu Asn Thr Thr Asp Phe Leu Asp Thr Ile
430 435 440

aag agc aac ctg gac aga gcc ctg ggc agg cag tag ggggaggcgc 1455
Lys Ser Asn Leu Asp Arg Ala Leu Gly Arg Gln
445 450

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35 40 45

Pro Val Val Glu Met Asp Gly Asp Glu Met Thr Arg Ile Ile Trp Gln
50 55 60

Phe Ile Lys Glu Lys Leu Ile Leu Pro His Val Asp Ile Gln Leu Lys

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Cys	Ala	Thr	Ile	Thr	Pro	Asp	Glu	Ala	Arg	Val	Glu	Glu	Phe	Lys	Leu
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Lys	Lys	Met	Trp	Lys	Ser	Pro	Asn	Gly	Thr	Ile	Arg	Asn	Ile	Leu	Gly
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Gly	Thr	Val	Phe	Arg	Glu	Pro	Ile	Ile	Cys	Lys	Asn	Ile	Pro	Arg	Leu
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Val	Pro	Gly	Trp	Thr	Lys	Pro	Ile	Thr	Ile	Gly	Arg	His	Ala	His	Gly
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Asp	Gln	Tyr	Lys	Ala	Thr	Asp	Phe	Val	Ala	Asp	Arg	Ala	Gly	Thr	Phe
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Lys	Met	Val	Phe	Thr	Pro	Lys	Asp	Gly	Ser	Gly	Val	Lys	Glu	Trp	Glu
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His	Tyr	Lys	Thr	Asp	Phe	Asp	Lys	Asn	Lys	Ile	Trp	Tyr	Glu	His	Arg
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Ala	Gln	Gly	Phe	Gly	Ser	Leu	Gly	Leu	Met	Thr	Ser	Val	Leu	Val	Cys

325

330

335

Pro Asp Gly Lys Thr Ile Glu Ala Glu Ala Ala His Gly Thr Val Thr
 340 345 350

Arg His Tyr Arg Glu His Gln Lys Gly Arg Pro Thr Ser Thr Asn Pro
 355 360 365

Ile Ala Ser Ile Phe Ala Trp Thr Arg Gly Leu Glu His Arg Gly Lys
 370 375 380

Leu Asp Gly Asn Gln Asp Leu Ile Arg Phe Ala Gln Met Leu Glu Lys
 385 390 395 400

Val Cys Val Glu Thr Val Glu Ser Gly Ala Met Thr Lys Asp Leu Ala
 405 410 415

Gly Cys Ile His Gly Leu Ser Asn Val Lys Leu Asn Glu His Phe Leu
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